



SHILAP Revista de Lepidopterología

ISSN: 0300-5267

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Sociedad Hispano-Luso-Americana de  
Lepidopterología  
España

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SHILAP Revista de Lepidopterología, vol. 37, núm. 148, diciembre, 2009, pp. 485-494

Sociedad Hispano-Luso-Americana de Lepidopterología  
Madrid, España

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# New records of mining Lepidoptera from the Iberian Peninsula (Lepidoptera: Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae)

Z. Laštůvka & A. Laštůvka

## Abstract

The records of ten species of mining Lepidoptera new for Portugal or Spain are presented. *Stigmella rolandi* Van Nieukerken, 1990, *S. minusculella* (Herrich-Schäffer, 1855), *Trifurcula (Levarchama) ortneri* (Klimesch, 1951), *T. (L.) subnitidella* (Duponchel, 1843) and *Pseudopostega chalcopepla* (Walsingham, 1908) are new for Portugal, and the following five species are new for Spain: *Phyllonorycter ulicicolella* (Stainton, 1851), *P. trifoliella* (Gerasimov, 1933), *Bucculatrix cidarella* (Zeller, 1839), *B. alpina* Frey, 1870 and *B. humiliella* Herrich-Schäffer, 1855. *Stigmella minusculella*, *Phyllonorycter trifoliella*, *Bucculatrix alpina* and *B. humiliella* are new for the Iberian Peninsula. New province records are given of 31 species (41 new province records in all). The female genitalia of *Trifurcula (Glaucopis) pederi* Laštůvka & Laštůvka, 2007 are described and hostplant data for *Phyllonorycter estrela* Laštůvka & Laštůvka, 2006 (*Cytisus multiflorus*) and *P. andalusicus* Laštůvka & Laštůvka, 2006 (*Genista umbellata*) are included.

KEY WORDS: Lepidoptera, Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae, mining species, new records, Iberian Peninsula.

## Nuevos registros de Lepidoptera minadores en la Península Ibérica (Lepidoptera: Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae)

## Resumen

Se mencionan diez registros de especies minadores de Lepidoptera nuevas para Portugal o España. *Stigmella rolandi* Van Nieukerken, 1990, *S. minusculella* (Herrich-Schäffer, 1855), *Trifurcula (Levarchama) ortneri* (Klimesch, 1951), *T. (L.) subnitidella* (Duponchel, 1843) y *Pseudopostega chalcopepla* (Walsingham, 1908) son nuevas para Portugal, y las cinco siguientes especies son nuevas para España: *Phyllonorycter ulicicolella* (Stainton, 1851), *P. trifoliella* (Gerasimov, 1933), *Bucculatrix cidarella* (Zeller, 1839), *B. alpina* Frey, 1870 y *B. humiliella* Herrich-Schäffer, 1855. *Stigmella minusculella*, *Phyllonorycter trifoliella*, *Bucculatrix alpina* y *B. humiliella* son nuevas en la Península Ibérica. Nuevas citas provinciales para 31 especies (41 nuevas citas provinciales en total). Se describe la genitalia femenina de *Trifurcula (Glaucopis) pederi* Laštůvka & Laštůvka, 2007 y se dan informaciones sobre las plantas nutricias de *Phyllonorycter estrela* Laštůvka & Laštůvka, 2006 (*Cytisus multiflorus*) y *P. andalusicus* Laštůvka & Laštůvka, 2006 (*Genista umbellata*).

PALABRAS CLAVE: Lepidoptera, Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae, especies minadoras, nuevos registros, Península Ibérica.

## Novos registros de Lepidoptera minadores na Península Ibérica (Lepidoptera: Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae)

## Resumo

Registros de dez espécies de minadores Lepidoptera novas para Portugal e Espanha serão aqui apresentados.

*Stigmella rolandi* Van Nieukerken, 1990, *S. minusculella* (Herrich-Schäffer, 1855), *Trifurcula (Levarchama) ortneri* (Klimesch, 1951), *T. (L.) subnitidella* (Duponchel, 1843) e *Pseudopostega chalcopepla* (Walsingham, 1908) são novas para Portugal, e as seguintes cinco espécies são novas em Espanha: *Phyllonorycter ulicicolella* (Stainton, 1851), *P. trifoliella* (Gerasimov, 1933), *Bucculatrix cidarella* (Zeller, 1839), *B. alpina* Frey, 1870 e *B. humiliella* Herrich-Schäffer, 1855. *Stigmella minusculella*, *Phyllonorycter trifoliella*, *Bucculatrix alpina* e *B. humiliella*, todas novas para a Península Ibérica. Novos registos provinciais referem-se à 31 espécies (41 novos registos provinciais no total). Genitálias femininas de *Trifurcula (Glaucolepis) pederi* Laštůvka & Laštůvka, 2007 são descritas e hospedeiros de *Phyllonorycter estrela* Laštůvka & Laštůvka, 2006 (*Cytisus multiflorus*) e *P. andalusicus* Laštůvka & Laštůvka, 2006 (*Genista umbellata*) também estão incluídos.

PALAVRAS CHAVE: Lepidoptera, Nepticulidae, Opostegidae, Bucculatricidae, Gracillariidae, espécies minadores, novos registos, Península Ibérica.

## Introduction

The continuing investigations of the mining Lepidoptera in the Iberian Peninsula produced records which are new for the whole peninsula or for its individual parts (countries, provinces). This contribution follows and supplements the publications especially by NIEUKERKEN *et al.* (2004) and LAŠTŮVKA & LAŠTŮVKA (2006, 2007a), also by CORLEY (2005), CORLEY *et al.* (2006, 2007, 2008), LAŠTŮVKA & LAŠTŮVKA (2005, 2007b, 2008), NIEUKERKEN (2006), and PIRES & CORLEY (2007). The findings of four species new for the Iberian Peninsula, five species new for Portugal, five for Spain and 31 species new for individual provinces are given here. The female genitalia of *Trifurcula (Glaucolepis) pederi* Laštůvka & Laštůvka, 2007 are described and data on hostplants of *Phyllonorycter estrela* Laštůvka & Laštůvka, 2006 and *P. andalusicus* Laštůvka & Laštůvka, 2006 are supplied.

## Material and methods

The presented records are mostly the results of the authors' (AL & ZL) three weeks visit to the Iberian Peninsula between June 7 and 24, 2009. Several data come from previous years or from other collectors. The material was mainly collected at light, but vacated mines or mines with larvae were found in several species. The collection of material is given in parentheses after the name of the collector.

## New country records

### NEPTICULIDAE

*Stigmella rolandi* Van Nieukerken, 1990

PT: Beira Baixa, Capinha, 1 ♂, 12-VI-2009, AL & ZL (AL).

Distributed in southern and partly in central Europe, up to Central Asia in the east (LAŠTŮVKA & LAŠTŮVKA, 1997). It mines the leaves of *Sanguisorba minor* and *Rosa* species and is known from various parts of Spain (NIEUKERKEN *et al.*, 2004). New species for Portugal.

*Stigmella minusculella* (Herrich-Schäffer, 1855)

PT: Algarve, Almarjão, 4 ♂♂, 2 ♀♀, 16-VI-2009, AL & ZL (AL).

Known from several parts of western, central and southern Europe, introduced also into North America. Its distribution is insufficiently known because of possible confusion with the newly rediscovered species *Stigmella stettinensis* (Heinemann, 1871) in faunistic reports. The larva develops on *Pyrus* species (LAŠTŮVKA & LAŠTŮVKA, 1997, 2004). New species for Portugal and the Iberian Peninsula (Fig. 1, 2).

*Trifurcula (Levarchama) ortneri* (Klimesch, 1951)

PT: Algarve, Silves, 23-IV-1992, mines on *Coronilla valentina*, M. Corley (MC); Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 1 ♂, 14-VI-2009, AL & ZL (AL).

Species with localized distribution in central and southern Europe. It is more widespread in the eastern half of the Iberian Peninsula; it develops on *Coronilla minima* and *C. valentina* there (LAŠTŮVKA & LAŠTŮVKA, 1997, NIEUKERKEN *et al.*, 2004). New species for Portugal.

*Trifurcula (Levarchama) subnitidella* (Duponchel, 1843)

PT: Algarve, Vila Real de Santo Antonio, 5 ♂♂, 2 ♀♀, and vacated stem mines on *Lotus creticus* on coastal dunes, 17-VI-2009, AL & ZL (AL).

Widespread in central and southern Europe, with few records in Spain. Its larva mines stems of *Lotus* spp. (LAŠTŮVKA & LAŠTŮVKA, 1997, NIEUKERKEN *et al.*, 2004). New species for Portugal.

#### OPOSTEGIDAE

*Pseudopostega chalcopepla* (Walsingham, 1908)

ES: Cáceres, Guadalupe, 2 ♂♂, 11-VI-2009; PT: Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 1 ♂, 20-VI-2008, AL & ZL (AL).

Known from southern France, Monaco, northern Africa and from many places in Spain (NIEUKERKEN *et al.*, 2004), but the published Portuguese records refer to *Opostegoides menthinella* (Mann, 1855) after CORLEY *et al.* (2006 and pers. comm.). New species for Portugal.

#### GRACILLARIIDAE

*Phyllonorycter trifoliella* (Gerasimov, 1933)

ES: Granada, Sierra Nevada, Camino del Veleta, 1 ♂, 4-VIII-1986, gen. prep. G-244 E. Olivella, E. Traugott-Olsen (ZMUC).

The adult of this species is very similar to *Phyllonorycter insignitella* (Zeller, 1846), but it differs distinctly in the genitalia morphology. The rigid thorn before the end of the left valva is thick and hook-like, the right valva slightly curved and distinctly pointed (Fig. 3, 4). The species was described from Caucasus (southern Russia) and recorded newly in Estonia, Latvia and Lithuania. The larva mines *Trifolium* and *Lathyrus* (NOREIKA & MOZURAITIS, 2002, DE PRINS & DE PRINS, 2005). The record of this species in Andalusia is therefore very surprising. New species for Spain and the Iberian Peninsula.

*Phyllonorycter ulicicolella* (Stainton, 1851)

ES: Granada, El Molinillo, 1 ♀, 27-VI-2004, 4 ♂♂, 3 ♀♀, 18-VI-2007, 1 ♂, 3 ♀♀, 13-VI-2008, 4 ♂♂, 5 ♀♀, ex p. 15-VI-2008 (pupae 13-VI-2008); Granada, 10 km N Otívar, 3 ♂♂, 5 ♀♀, 14-VI-2008; Málaga, Jubrique, 1 ♀, 16-VI-2008, all AL & ZL (AL).

Adults and pupae were collected in bushes of *Ulex parviflorus*, *U. europaeus* and *Ulex* sp. It is very probably more widely distributed with its hostplants, but the stem mines are nearly invisible (Fig. 5, 6). Known from England, NW France (LAŠTŮVKA & LAŠTŮVKA, 2006) and Gibraltar (PEREZ, 2009). New species for Spain.

#### BUCCULATRICIDAE

*Bucculatrix cidarella* (Zeller, 1839)

ES: Girona, La Jonquera, 1 ♂, ex p. VI-2009 (cocoon 7-VI-2009 on the stem of *Alnus glutinosa*), AL & ZL (AL).

Widely distributed in western, central and northern Europe with its hostplant *Alnus glutinosa* (MEY, 2007). There is also a new Portuguese record (CORLEY *et al.*, 2009). New species for Spain (Fig. 7).

*Bucculatrix alpina* Frey, 1870

ES: Cuenca, La Toba, 1 ♂, 26-VI-2007, AL & ZL, det. Z. Tokár (AL).

Known from the Alpine countries (Austria, France, Italy, Switzerland), its larva mines leaves of *Chrysanthemum* (MEY, 1999, 2007). New species for Spain and the Iberian Peninsula (Fig. 8).

*Bucculatrix humiliella* Herrich-Schäffer, 1855

ES: Granada, Puebla de Don Fadrique, La Sagra, 1 ♂, 21-VI-2009; Teruel, Alcalá de la Selva, 2 ♂♂, 1 ♀, 3-VII-1994, AL & ZL, det. Z. Tokár (AL).

Recorded as scarce in several central European countries and especially in northern Europe (MEY, 2007). Its larva mines on *Achillea* and *Tanacetum* (PITKIN *et al.*, 2009). New species for Spain and the Iberian Peninsula (Fig. 9).

**New province records**

NEPTICULIDAE

The complete faunistic data and appropriate remarks to the following Nepticulidae species are given mostly by NIEUKERKEN *et al.* (2004).

*Stigmella thuringiaca* (Petry, 1904)

ES: Albacete, El Pardo, 3 ♂♂, 3 ♀♀, 22-VI-2009; Cáceres, Guadalupe, 2 ♂♂, 11-VI-2009, AL & ZL (AL).

*Stigmella aurella* (Fabricius, 1775)

ES: Cáceres, Guadalupe, 1 ♂, 1 ♀, 11-VI-2009, AL & ZL (AL).

*Stigmella suberivora* (Stainton, 1869)

ES: Tarragona, 3 km S Fayón, 1 ♂, 2 ♀♀, 24-VI-2009, AL & ZL (AL).

*Stigmella ilicifoliella* (Mendes, 1918)

ES: Cáceres, Guadalupe, 2 ♂♂, 11-VI-2009, AL & ZL (AL).

*Stigmella basiguttella* (Heinemann, 1862)

PT: Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 2 ♂♂, 20-VI-2008, 1 ♂, 14-VI-2009, AL & ZL (AL).

*Stigmella dorsiguttella* (Johansson, 1971)

ES: Cáceres, Guadalupe, 1 ♀, 11-VI-2009, AL & ZL (AL).

*Stigmella eberhardi* (Johansson, 1971)

ES: Albacete, El Pardo, 1 ♂, 22-VI-2009; Gerona, La Junquera, 1 ♂, 1 ♀, 7-VI-2009, AL & ZL (AL).

*Acalyptris minimella* (Rebel, 1926)

ES: Tarragona, 3 km S Fayón, 1 ♂, 24-VI-2009, AL & ZL (AL).

*Trifurcula (Glaucopis) alypella* Klimesch, 1975

ES: Tarragona, 3 km S Fayón, 3 ♂♂, 8-VI-2009, 6 ♂♂, 2 ♀♀, 24-VI-2009, AL & ZL (AL).

*Trifurcula (Glaucopis) thymi* (Szöcs, 1965)

ES: Tarragona, 3 km S Fayón, 1 ♂, 8-VI-2009; PT: Baixo Alentejo, Grandola, 3 ♂♂, 15-VI-

2009; Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 3 ♂♂, 1 ♀, 14-VI-2009, AL & ZL (AL).

*Trifurcula (Glaucolepis) teucriella* (Chrétien, 1914)

ES: Granada, Puebla de Don Fadrique, La Sagra, 1 ♂, 21-VI-2009, AL & ZL (AL).

Known from few localities in southern France and from Port Bou (Gerona) in Spain. The second Iberian record.

*Trifurcula (Glaucolepis) corleyi* Laštůvka & Laštůvka, 2007

ES: Cáceres, Guadalupe, 1 ♂, 11-VI-2009, AL & ZL (AL).

*Trifurcula (Glaucolepis) rosmarinella* (Chrétien, 1914)

ES: Cáceres, Guadalupe, 2 ♂♂, 11-VI-2009; Tarragona, 3 km S Fayón, 2 ♂♂, 8-VI-2009; PT: Beira Baixa, Castelo Branco, Capinha, 1 ♂, 12-VI-2009, AL & ZL (AL).

*Trifurcula (Levarchama) eurema* (Tutt, 1899)

ES: Tarragona, 3 km S Fayón, 6 ♂♂, 8-VI-2009, AL & ZL (AL).

*Trifurcula (Trifurcula) immundella* (Zeller, 1839)

ES: Cáceres, Guadalupe, 2 ♂♂, 1 ♀, 11-VI-2009; PT: Baixo Alentejo, Ameiras de Baixo, 2 ♀♀, 15-VI-2009, AL & ZL (AL).

*Parafomoria halimivora* van Nieukerken, 1985

PT: Beira Alta, Serra da Estrela, Manteigas, Pousada, 5 ♂♂, 18-VI-2005, on *Halimium alyssoides*, AL & ZL (AL).

*Parafomoria liguricella* (Klimesch, 1946)

PT: Beira Baixa, Castelo Branco, Capinha, 10 ♂♂, 12-VI-2009, on *Cistus crispus*, AL & ZL (AL).

*Ectoedemia (Fomoria) euphorbiella* (Stainton, 1869)

ES: Tarragona, 3 km S Fayón, 1 ♂, ex l. VII-2009 (larvae 8-VI-2009 on *Euphorbia* sp.), AL & ZL (AL).

*Ectoedemia (Zimmermannia) longicaudella* Klimesch, 1953

PT: Beira Baixa, Castelo Branco, Capinha, 1 ♂, 1 ♀, 12-VI-2009, AL & ZL (AL).

*Ectoedemia (Zimmermannia) liebwerdella* (Zimmermann, 1940)

PT: Beira Baixa, Castelo Branco, Capinha, 2 ♂♂, 12-VI-2009, AL & ZL (AL).

*Ectoedemia (Ectoedemia) ilicis* (Mendes, 1910)

PT: Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 2 ♂♂, 14-VI-2009, AL & ZL (AL).

*Ectoedemia (Ectoedemia) pubescivora* (Weber, 1937)

PT: Beira Baixa, Castelo Branco, Capinha, 3 ♀♀, 12-VI-2009, AL & ZL (AL).

## OPOSTEGIDAE

*Opostegoides menthinella* (Mann, 1855)

ES: Zaragoza, Tosos, 3 ♂♂, 1 ♀, 11-VI-2006; Zaragoza, Aguarón, 1 ♂, 3 ♀♀, 11-VI-2007; PT: Ribatejo, Serras de Aire e Candeeiros Natural Park, Valverde, 1 ♂, 14-VI-2009, AL & ZL (AL).

The species is widespread in Spain (NIEUKERKEN *et al.*, 2004), recorded for the first time by VIVES MORENO (1992).

*Opostega spatulella* Herrich-Schäffer, 1855

PT: Algarve, Faro, Almarjão, 1 ♂, 16-VI-2009, AL & ZL (AL).

Although not a new province record, it is only the second Portuguese record; for the first time given by CORLEY *et al.* (2000).

## BUCCULATRICIDAE

*Bucculatrix alaternella* Constant, 1890

ES: Barcelona, Santa María de Oló, 1 ♂, 25-VI-2008; Málaga, Jubrique, 1 ♂, 16-VI-2008; Zaragoza, Tosos, 4 ♂♂, 28-VI-2006, AL & ZL (AL).

## GRACILLARIIDAE

*Parornix devoniella* (Stainton, 1850)

PT: Beira Baixa, Capinha, vacated mines on *Corylus avellana*, 11-VI-2009, AL & ZL (AL).

Species given from Portugal by CORLEY *et al.* (2006) and CORLEY *et al.* (2009).

*Phyllonorycter barbarella* (Rebel, 1901)

ES: Lérida, Coll del Canto, 10-VI-2007, 4 ♂♂, 3 ♀♀, AL & ZL (AL).

Probably widespread in the Iberian Peninsula, with trophic relation to *Quercus pubescens* and *Q. faginea* (LAŠTŮVKA & LAŠTŮVKA, 2007).

*Phyllonorycter rebimbasi* (Mendes, 1910)

ES: Barcelona, Santa María de Oló, 2 ♂♂, 1 ♀, 25-VI-2008, AL & ZL (AL).

Described from Portugal by MENDES (1910), and later also from Spain as *Lithocolletis glaserorum* by DESCHKA (1969). Distributed with its host plant *Quercus coccifera* in southern France, Spain and Portugal (LAŠTŮVKA & LAŠTŮVKA, 2007).

*Phyllonorycter kusdasi* (Deschka, 1970)

ES: Barcelona, Santa María de Oló, 1 ♂, 1 ♀, 7-VI-2008; Málaga, Jubrique, 1 ♂, 1 ♀, 16-VI-2008, AL & ZL (AL).

Distributed in southern Europe from Spain to Greece, known only in the Cuenca province in Spain. Its mines have been found on *Quercus pubescens* (LAŠTŮVKA & LAŠTŮVKA, 2007).

*Phyllonorycter hesperiella* (Staudinger, 1859)

PT: Algarve, Vila Real de Santo António, 14 ♂♂, 8 ♀♀, 17-VI-2009, AL & ZL (AL).

First record of adults from Portugal, where only mines had been found (LAŠTŮVKA & LAŠTŮVKA, 2006).

*Phyllonorycter insignitella* (Zeller, 1846)

ES: Teruel, Albarracín, 1 ♂, 1 ♀, ex larvae, VII-1991 (mines 4-VII-1991 on *Medicago* sp.).

In Spain recorded from the province of Zaragoza by KING & MURRIA (2002).

## New data on morphology and biology

*Trifurcula (Glaucolepis) pederi* Laštůvka & Laštůvka, 2007

ES: Albacete, El Pardo, 3 ♀♀, 22-VI-2009; Granada, Puebla de Don Fadrique, La Sagra, 19 ♂♂, 7 ♀♀, 21-VI-2009; Tarragona, 3 km S Fayón, 1 ♂, 8-VI-2009, AL & ZL (AL).

This species was described from several males (LAŠTŮVKA & LAŠTŮVKA, 2007). We were able to collect female specimens with males in 2009, they are very similar to them, so that they belong very probably to this species. The females are slightly darker than males, with wingspan 4.6–5.4 mm.

Female genitalia (Fig. 10). Anal papillae to the end of apophyses 0.24 mm, the whole length of genitalia 0.71 mm; abdominal end slightly elongate; anal papillae with about 22 short setae, 8th tergite with groups of 3–7 long setae laterally; anterior and posterior apophyses of the same length, anterior apophyses very thick; corpus bursae large, signa similar (about 0.2 mm), about three or four times longer than broad, with 4–6 rows of cells; ductus spermathecae with about 6–7 distinct convolutions.

*Phyllonorycter estrela* Laštůvka & Laštůvka, 2006

ES: Ávila, Las Vueltas, 1 ♂, 6 ♀♀, 22-VI-2008, 1 ♀, ex pupa, 24-VI-2008 (pupa 22-VI-2008, stem mine on *Cytisus multiflorus*).

*Genista cinerea* or *G. cinerascens* were presupposed to be hostplants of this species, because the adults were collected in their bushes (LAŠTŮVKA & LAŠTŮVKA, 2006). But the species was reared from stem mines on *Cytisus multiflorus*, together with several specimens of *Phyllonorycter scopariella* (Zeller, 1846). *Cytisus multiflorus* is then its hostplant.

*Phyllonorycter andalusicus* Laštůvka & Laštůvka, 2006

ES: Granada, Caniles, 3 ♂♂, 6 ♀♀, ex pupa VI-2008 (pupae 12-VI-2008, stem mines on *Genista umbellata*).

The species was described from adults collected at light in bushes of *Retama sphaerocarpa*, which was considered a possible hostplant (LAŠTŮVKA & LAŠTŮVKA, 2006). But the adults were reared from stem mines on *Genista umbellata*, occurring often together with *Retama*.

## Acknowledgements

We are grateful to Mr. M. Corley (Faringdon) for important comments on the manuscript, supplementary faunistic data and linguistic revision of the text, to Mr. O. Karsholt (ZMUC, Copenhagen) for the loan of study material (especially of *Phyllonorycter trifoliella*), to Mr. Z. Tokár (Michalovce) for the determination of the two *Bucculatrix* species, to Dr. A. Vives (Madrid) for support in obtaining collecting permits for Spain in the Scientific Project of SHILAP and for the linguistic revision of the Spanish abstract, to Dr. M. Sequeira (ICN, Lisboa) for the permit to collect Lepidoptera in protected areas of Portugal, and to Mss. L. Šafránková (Brno) for the revision of the Portuguese abstract.

This study was supported by the Research plan No. MSM6215648905 “Biological and technological aspects of sustainability of controlled ecosystems and their adaptability to climate change”, which is financed by the Ministry of Education, Youth and Sports of the Czech Republic.

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(Recibido para publicación / *Received for publication* 19-X-2009)

(Revisado y aceptado / *Revised and accepted* 20-XI-2009)

(Publicado / *Published* 30-XII-2009)

